

**REMARKS/ARGUMENTS**

This application has been reconsidered carefully in light of the Office Action dated as mailed on 31 July 2003. A careful reconsideration of the application by the Examiner in light of the foregoing amendments and the following remarks is respectfully requested.

5                    This response is timely filed as it is filed within the three (3) month shortened statutory period for response to the outstanding Office Action.

                    This response is also accompanied with a check and/or authorization to charge a deposit account for any additional claim fee due as a result of this Amendment because the number of independent claims exceeds the number of  
10 independent claims for which fees have previously been paid, the total number of claims exceeds the total number of claims for which fees have previously been paid, or both.

                    It is understood that the previously submitted document entitled, "Amendment C" and mailed on 30 September 2003 in response to the outstanding  
15 Final Office Action has not been currently entered. As the present document supercedes that "Amendment C", entry of that Amendment C is not here requested.

**Amendment to the Claims**

By the above,

1. independent claims 25, 47 and 57 have been rewritten to improve their form and to make more clear the invention which Applicants regard as their invention,
2. claim 53 has been rewritten in independent form including all of the limitation of the base claim and any intervening claims;
3. claims 29, 43 and 52 have been canceled without prejudice, and
4. claims 64-66 have been added to more fully and completely claim the disclosed subject matter.

More particularly, claim 25 has been amended to make clear that the mixture that is heated within the inflator device to form the fuel material in site, is free of free water and claim 47 has been rewritten to require that reacting of a water-supplying compound contained within the inflator device to form water occurs in the absence of free water. In this regards, attention is directed to the originally-filed specification such as:

1. page 3, line 8 through page 4, line 12, where difficulties associated with water reactive materials and the need to avoid contact between such reactive materials and water are discussed;

2. page 17, line 10 through page 19, line 17, where suitable water-supplying compounds are discussed, described and identified. Such water-supplying compounds, including inorganic hydrated compounds (page 17, lines 11-17) produce or form water but are not themselves water, i.e., the water-supplying compound is free of free water; and

3. page 45, lines 18-20, which expressly provides that the disclosed invention suitably can be practiced in the absence of any element, part, step, component, or ingredient which is not specifically disclosed therein.

Claim 57 has been rewritten for purposes of clarity. In particular, claim 57 has been rewritten to make clear that the water-reactive fuel precursor required therein comprises:

- a) at least one metal element-containing material selected from the group consisting of hydrides, carbides, alkoxides and combinations thereof and
- b) a carbonate-containing material.

Claims 64-66 have been added to more fully and completely claim the disclosed subject matter. Such claims are believed to be fully supported by the originally filed specification and to be directed to the previously elected subject

matter. More particularly, claims 64 and 66 each require that the fuel precursor comprise at least one first component selected from the group of metals and organometallic compounds and at least one second component selected from the group of carbonates and bicarbonates. Claim 65 requires that the water-reactive fuel precursor comprise an alkali metal. Such claim finds support throughout the originally-filed specification such as at page 16, line 13 through page 17, line 9, for example.

Claims 25-28, 30, 31, 36-42, 44-51 and 53-66 remain in the application, with claims 27, 28, 44-46, 48-51, 55 and 56 having been withdrawn from consideration.

### **Rejections - 35 U.S.C. §112**

The withdrawal of the 112 rejections is gratefully acknowledged.

### **Allowable Subject Matter**

The undersigned also wishes to thank Examiner Hardee for the allowance of claim 30, the identification that claim 53, if rewritten in independent form including all of the limitation of the base claim and any intervening claims, would be allowable and the identification that claim 57 and the claims dependent thereon are allowed to the extent that they read on the elected subject matter.

By the above, claim 53 has been so rewritten. Thus, claim 53 is believed to be in condition for allowance and notification to that effect is solicited.

While the allowance of claim 57 and the claims dependent thereon “to the extent that they read on the elected subject matter” has been acknowledged, it is noted that in response to the earlier restriction/election requirements, claims 57, 61 and 62 were identified as readable on the practice of the elected method employing compositions which include ammonium nitrate as a water-supplying compound and potassium t-butyl carbonate as a water-reactive fuel precursor. Moreover, claims 57, 61 and 62 had previously been rejected only under §112 and such §112 rejections have now been withdrawn.

In view thereof, as no prior art grounds of rejection of claims 57, 61 and 62 have now or previously been made in the present or any prior Action, claim 57 and the claims dependent thereon (including previously elected claims 61 and 62) are believed to be in condition for allowance and notification to that effect is solicited.

#### **Claim Rejections - 35 U.S.C. §102(a)**

In the Final Action, claims 25, 26, 31, 36-38, 40, 42, 47, and 54 were rejected under 35 U.S.C. §102(b) as being anticipated by WO 00/29261. Per the Advisory Action, it is understood that the proper grounds of rejection is 35 U.S.C. §102(a) and the rejection of claim 42 under §102 has been withdrawn.

It is respectfully submitted that WO 00/29261 fails to show or suggest an improvement in a method for inflating an inflatable safety device via an inflator device wherein a fuel material reacts to form gas generation reaction products, the improvement comprising: heating a mixture containing at least a water-supplying compound and a water-reactive fuel precursor within the inflator device to form the fuel material in situ, as required by independent claim 25, for example. In particular, it is believed that WO 00/29261 fails to show or suggest heating a mixture containing at least a water-supplying compound and a water-reactive fuel precursor within the inflator device to form the fuel material in situ, as specifically claimed. In this regards, WO 00/29261 specifically teaches the inclusion of a carborane fuel material and a primary oxidant (water is identified as a preferred primary oxidant as page 12, lines 20-23). As disclosed in WO 00/29261, the carborane fuel and the primary oxidant (e.g., water) react to form first combustion products such as typically includes heat and a quantity of a first product fuel species. (See WO 00/29261, page 13, lines 17-24.) The inflator device in WO 00/29261 initially contains the primary oxidant (e.g., water) and this primary oxidant is **NOT** provided or supplied by a water-supplying compound, as in the claimed invention.

To further emphasis the distinction between the subject invention development and the disclosure of WO 00/29261, claim 25 has been above rewritten to require that the mixture that is heated within the inflator device to form the fuel

material in situ is free of free water and contains both a water-supplying compound and a water-reactive fuel precursor and claim 47 has been above rewritten to require reacting, in the absence of free water, a water-supplying compound contained within the inflator device to form water. In this regards it is specifically noted that while the application describes and identifies various water-supplying compounds suitable for use in the practice of the invention, including certain inorganic hydrated compounds (see page 17, lines 10-17, for example), the water-supplying compounds used in the invention are not themselves water as, for example, the invention seeks to avoid the complications associated with the inclusion of water in contact with a water-reactive material within an inflator device. (See page 3, line 8 through page 4, line 2, for example.)

In view of the above, the withdrawal of this stated basis of rejection as applied to claim 25 and the claims dependent thereon (including claims 26, 31, 36-38 and 40) as well as to claim 47 and the claims dependent thereon (including claim 54) is respectfully requested.

#### **Claim Rejections - 35 U.S.C. §103**

1. Claims 25, 26, 31, 36-38, 40, 42, 47 and 54 were rejected under 35 U.S.C. §103(a) as being unpatentable over WO 00/29261.

As a preliminary matter, it is noted that claim 42 is dependent on claim 41. As claim 41, which requires that the first chamber be at least in part defined by a perforated housing, has not been rejected based on WO 00/29261, neither claim 42 which depends on claim 41 is believed to be properly rejected based on WO 00/29261 and notification to that effect is solicited.

As submitted above relative to the anticipation rejection of claims 25, 26, 31, 36-38, 40, 42, 47, and 54 based on WO 00/29261, and which arguments are herein and hereat incorporated, such methods for inflating an inflatable safety device as specifically claimed are not believed to be shown or suggested by WO 00/29261.

2. Claims 25, 26, 31, 36-39, 41 and 42 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,224,099 B1 to Nielson et al. (hereinafter "Nielson") for the reasons of record presented in the earlier Action, dated 12 March 2003.

Independent claim 25 is directed to an improvement in a method for inflating an inflatable safety device via an inflator device wherein a fuel material reacts to form gas generation reaction products, the improvement comprising: heating a mixture free of free water and containing at least both a water-supplying compound and a water-reactive fuel precursor within the inflator device to form the fuel material



in situ. Thus, claim 25 specifically requires that in a method for inflating an inflatable safety device via an inflator device wherein a fuel material reacts to form gas generation reaction products, that a mixture containing at least a water-supplying compound and a water-reactive fuel precursor be heated within the inflator device to form the fuel material in situ.

Such in situ formation of such a fuel material is nowhere shown or suggested by Nielson. For example, Nielson does not show or suggest the heating of a mixture containing at least a water-supplying compound and a water-reactive fuel precursor within the inflator device to form the fuel material in situ, as specifically claimed.

Further, while the Action dated 12 March 2003 states that Nielson discloses that the gas generant compositions used therein may “comprise a binder, such as polypropylene carbonate”, the use of a binder such as polypropylene carbonate is not what is being claimed. In this regards it is noted that the application specifically identifies that suitable water-reactive fuel precursor materials for use in the practice of the invention include metals (particularly alkali metals) or organometallic compounds bonded to carbonates or bicarbonates. (See page 16, lines 13-18, for example.)

The apparent equating of the polypropylene carbonate binder of Nielson with the water-reactive fuel precursor materials of the invention does not appear to

be based on anything in the prior art and, in any case, such a polypropylene carbonate binder is **NOT** a metal or organometallic compound bonded to a carbonate. As those skilled in the art will appreciate, polymeric carbonates such as the polypropylene carbonate disclosed in Nielson are not water-reactive let alone water-reactive fuel precursor materials as required by the pending claims.

In view of the above, such basis of rejection of claim 25 and the claims dependent thereon are believed to be overcome or not applicable and notification to that effect is solicited.

It is further specifically noted that claim 42 specifies a liner within the perforated housing maintaining the first chamber contents in discharge proximity with the initiator. The end piece 4 of Nielson is just that, an end piece. Such an end piece is not a liner and is clearly not a liner within a perforated housing effective to maintain chamber contents in discharge proximity with the initiator, as required by claim 42.

Regarding the liner, the Advisory Action states that “the examiner reads the reference as teaching the perforated end piece defines a portion of the chamber, and it will therefore keep the chamber contents in discharge proximity with the initiator.” That, however, is not what is being claimed in claim 42. Even assuming solely for the sake of argument that an end piece with an opening for an initiator, as in Nielson, constitutes a perforated housing or a portion thereof, Nielson nowhere

shows or suggests “a liner within the perforated housing” that maintains the first chamber contents in discharge proximity with the initiator, as required by claim 42. Claim 42 requires a liner within the perforated housing.

#### **Withdrawn Claims**

5                   As identified above, claims 27, 28, 44-46, 48-51, 55 and 56 have been withdrawn from consideration.

                  As claims 27, 28 and 44-46 depend on claim 25 and claims 48-51, 55 and 56 depend directly or indirectly on claim 47 and, as described above, claims 25 and 47, respectively, are each believed to be patentable over the prior art of record, so to are these claim also believed patentable over the prior art of record and notification to that effect is solicited.

#### **Newly Added Claims**

                  Claims 64-67 have been added to more fully and completely claim the disclosed subject matter.

15                  Claims 64 and 67 each require that the fuel precursor comprise at least one first component selected from the group of metals and organometallic compounds and at least one second component selected from the group of carbonates and bicarbonates. As submitted above, the prior art fails to show or suggest methods in accordance with the invention and employing such water-reactive fuel precursor materials.

Claim 65 depends on claim 25 and further requires that the water-reactive fuel precursor comprises an alkali metal. Such method is not believed to be shown or suggested by the cited prior art.

In view of the above, these claims are believed to be in condition for allowance and notification to that effect is solicited.

### Conclusion

It is believed that the above Amendment places all pending claims in condition for allowance and notification to that effect is solicited. However, should the Examiner detect any remaining issue or have any question, the Examiner is kindly requested to contact the undersigned, preferably by telephone, in an effort to expedite examination of the application.

Respectfully submitted,



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